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A Periodical Record of Investigations Bearing on Problems of Food Production, Distribution, Conservation and Consumption, as well as on Public Health, and Race and Population Problems as Related to the Countries Bordering on the Pacific.

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The Pan-American Medical Congress

Panama, January 30 to February 3, 1930

The Director of the Pan-Pacific Union is an invited guest and delegate to the Second Pan-American Medical Association Congress being held in Panama City from January 30 to February 3, 1930. The Director is bearing an invitation to the Pan-American Medical Association to hold its 1933 gathering in Honolulu as a part of the Pan-Pacific Medical Congress and to participate with the Pan-Pacific Union in an invitation to the Far Eastern Tropical Medical Association and the Australian Medical Association to unite in such a congress and to consider the formation of a permanent Pan-Pacific Medical Association that shall meet from time to time in some Pacific city.

The following is the tentative program of the Second Pan-American Medical Congress:

TENTATIVE PROGRAM

SECOND PAN-AMERICAN ASSOCIATION CONGRESS

JANUARY 30TH.—EVENING:

Inaugural Session, Instituto Nacional.

A—Address H. E. Mr. L. E. Clement, Secretary of State, Rep. Panamá.

B—Welcome Address by Dr. Nicolás A. Solano, Pres. Local Committee.

C—Address by Dr. Lewellys Barker, Vice-Pres. Pan-American Medical Association.

D—Address by Dr. F. M. Fernández, Pres. Pan-American Medical Association.

JANUARY 31ST.—MORNING:

Visit to Hospital Santo Tomás, Surgical Demonstrations and Instructions Courses.

Lunch in honor of the Members of the Congress, by the Medical Association of the Santo Tomás Hospital.

NOON:—Ordinary Scientific Session. Presentation and Discussion of Papers. Gorgas Memorial Institute.

NIGHT—Reception at the Presidential Palace.

FEBRUARY 1ST.—MORNING:

Visit to Gorgas Hospital, Canal Zone, Instructions Courses.

Lunch offered by the Isthmian Association in honor of the Members of the Congress.

NOON—Ordinary Scientific Session. Gorgas Memorial Institute.

FEBRUARY 2ND—MORNING:

Visit to the Tuberculosis Hospital, and of the Red Cross Society, Instructions Courses.

Lunch offered to the Members of the Congress by the National Committee against Tuberculosis.

NOON—Ordinary Scientific Session. Gorgas Memorial Institute.

NIGHT—Banquet in honor of the Congress offered by the Government of the Republic of Panamá Union Club.

FEBRUARY 3RD.—MORNING:

Surgical Demonstrations in Hospital Santo Tomás, and Instructions Courses.

Final Assembly. Instituto Nacional.

NOON—2 p.m. Special train leaves Panamá for Cristóbal, Canal Zone.

4 p.m. S.S. "*Ebro*" leaves Cristóbal, northbound to Havana and New York.

Any information can be obtained from: in New York, Dr. Conrad Borens, Executive Secretary, 30 E. 40th St.; Dr. Adolfo Ferrer, 129 Broad St. In Panamá: Dr. Nicolás Solano, Pres. Local Committee. In Havana: Dr. J. E. López-Silvero, Secretaría de Sanidad.

The Proceedings of the First Pan-Pacific Surgical Conference.

The proceedings of the First Pan-Pacific Surgical Conference held in Honolulu in August, 1929, 14 to 24, under the auspices of the Pan-Pacific Union, are now off the press. This is a volume of five hundred pages, illustrated, published by the Pan-Pacific Union for the two hundred delegates who attend the Conference. Copies are being mailed to each registered delegate. Additional copies may be procured at $5.00 a volume.

Much thanks is due Miss A. Y. Satterthwaite, Conference Secretary of the Pan-Pacific Union, in the preparation of this volume. Four months' constant effort, with the help of an assistant was necessary, the Editorial Committee of surgeons giving valuable technical assistance in the preparation and correction of proof.

The Pan-Pacific Surgical Conference

By DR. RICHARD FRANCIS, M.B., Ch.M., F.C.S.A.
(The Medical Journal of Australia)

The Pan-Pacific Surgical Conference was held at Honolulu from August 14 to 24, 1929, under the auspices of the Pan-Pacific Union. The Pan-Pacific Union is an executive body financed by the state and by private individuals. Its function is to promote amity between countries bordering on the Pacific Ocean and to encourage intercourse between these countries on all subjects of common interest, in order to create a broader understanding. The machinery of the Union is used to arrange all preliminaries for any definite conference, after which the conference is controlled by office-bearers appointed by that conference. Financial assistance is also rendered by the Pan-Pacific Union.

The conference commenced on August 14 and lasted ten days. The official opening was held in the grounds of the Royal Hawaiian Hotel and consisted of a reception by the trustees of the Pan-Pacific Union, a pageant of flags of all nations represented at the conference, an address of welcome by the President of the Pan-Pacific Union and the handing over of the management to the surgeons. The representative of each delegation then conveyed greetings. Dr. Ralph Worrall spoke for the College of Surgeons of Australia and Professor Osborne for the Government of Victoria and the University of Melbourne. There were members from Australia, Canada, China, Japan, Korea, Latin America, New Zealand, the United States of America; with the members of the Hawaiian Medical Association about 200 persons attended the conference.

The Governor of the Territory of Hawaii held an official reception the same evening, which concluded the proceedings of welcome.

The discussions began on August 15. A breakfast clinic was held at the Royal Hawaiian Hotel each morning from 7:30 until 9 o'clock. The subjects discussed at these clinics on the various days were abdominal surgery, eye, ear, nose and throat surgery, chest surgery, gynæcology, orthopædic surgery, head surgery, industrial surgery and genito-urinary surgery. A chairman presided and after breakfast an informal discussion took place.

The other meetings were held in the Moana Hotel with two rooms in constant occupation. Meetings occupied the mornings from nine o'clock onwards. The afternoons with the exception of a demonstration of leprosy at the local receiving station and a clinical meeting at the Queen's Hospital, were occupied in social functions and visits to places of interest, such as the Ewa sugar mill and the Hawaiian pineapple factory.

On three evenings public meetings were held, when medical and hospital subjects of interest to the general public were dealt with by various speakers.

The eighteen symposia covered surgery in all its branches with the exception of gynæcology. The Gynæcological Club of America was represented by only one member, Dr. C. Jeff Miller, as the annual meeting of this club had been held earlier in the year elsewhere. Eighty papers in all were discussed and to allow of this the following procedure was adopted. No paper was read entirely, the author being allowed twenty minutes only. In this time he gave a synopsis with lantern slides or cinematograph films. Complete copies of the papers were available to the members previous to the meeting, so that the discussions which followed were not impromptu. Lantern slides or cinematograph demonstrations were frequently used, not only to illustrate conditions, but also to present tabular material.

The papers read were of interest and well presented, but many were of necessity simple repetitions of routine methods of diagnosis and treatment. Mention will be made in this place only of those revealing new ideas.

General Surgery.—In the first symposium on general surgery, Professor W. A. Osborne's paper, entitled "Some Applications of Recent Physiology to Surgery," stood out as the paper of the morning. In regard to anæsthesia he stated that more attention should be paid to retaining the patient's body warmth. In his own experiments an animal could be anæsthetized deeply and continually for nine hours with chloroform without any loss of nervous and circulatory reaction, provided the body warmth was maintained. The exhibition of atropine prior to anæsthesia should be in moderation both as regards dosage and practice. Many people manifest an idiosyncrasy and its action in inhibiting secretion in the breathing tracts removes a natural protection and brings about a greater irritation. The position should be a naturally comfortable one. Most people did not sleep comfortably in the dorsal position with head extended and this position for induction probably tended to increase the excitement.

Regarding anociceptive surgery the lessening of shock by the combination of local and general anæsthesia had not been so successful as had been anticipated. This failure he attributed to the fact that the procedure, while lessening shock to the central nervous system, caused more tissue trauma. This tissue trauma released histamine, a poison which when absorbed, acted adversely. The obvious conclusion was to injure living tissue as little as possible.

Recent work had shown the dominant nature of the pattern of the nerves carrying impulses of a sensory nature. Some idea was being gained of the complexity of the pattern and pattern sequence in the motor nerves innervating a voluntary muscle. When a nerve was crushed, the proximal nerve fibres regenerated along their old paths with recovery of function. But when a nerve was cut, the regenerating fibre took the shortest course and the chances of it being along the old track were remote. After nerve section and suture the function was not good and the slowness of improvement was due to the laborious reeducation necessary in the central nervous system owing to the distorted pattern. The conclusion was that tendon transplantation was physiologically a sounder procedure than nerve suture. In speaking of the irritability of smooth muscle, Professor Osborne said that asthma was an obvious manifestation of spasm. It was possible that smooth muscle in other organs was so affected that symptoms suggestive of organic disease were provoked. Migraine, renal and biliary colic and uterine dysfunctions might be due to this cause.

It was well known that a tissue immersed in or perfused with a fluid of a lower specific gravity would become water-logged and the cells would die, but it was not so well known that unless the fluid contained a colloid to balance the colloid within the cell wall, absorption of the fluid would continue. This physiological fact should be remembered in preparing artificial infant foods and antiseptic lotions for tissue irrigation. Professor Osborne regarded the views of Dr. Hamilton Russell and of Dr. Craig on muscle tonus after fracture as physiologically sound. Briefly they were that deformity due to muscular action might occur temporarily at the time of the fracture, but after this stage, if the contour of the limb were restored and the limb placed in the position by physiological rest, the action of the muscles as a deforming force could be ignored. The interference with circulatory function by sympathetic ramisectomy caused interference of function in the area involved. Kilvington had proved that ligature of arteries

in stages produced better results with less risk of gangrene.

Professor T. S. Seo, of Japan, discussed the surgery of the hæmatopoietic organs with special reference to splenomegaly due to *Schistosoma japonicum* and to eumycetes. The fluke worm *Schistosoma japonicum* invaded the human host through the skin exposed to rice water in the rice fields. It was endemic in many districts in Japan and had been present in different districts for varying periods of time. This meant that infections of different durations could be investigated. The acute original infection lasted about three weeks and drug treatment was effective if properly administered at this stage. In the chronic stage the liver, spleen and intestinal wall were affected and until the author had success with splenectomy nothing had been of benefit. The surgical treatment had only recently been tried, but the beneficial results were sufficient to encourage him to continue this treatment. In splenomegaly due to eumycetes it was uncertain whether the fungus found by several observers in Egypt, Algiers and France as well as in Japan, was the primary infecting factor. Splenectomy was considered the best treatment, but again postoperative observation had not been of long enough duration to consider it a cure.

Surgery of the Nervous System—In the second symposium Dr. George W. Swift discussed the dural venous sinuses and choked discs. After discussing the variations found in the venous sinuses and their embryological formation, he stated that the occurrence of choked discs was caused mechanically by damming up of blood by pressure on the sinus.

Professor Makoto Saito, of Japan, considered the Röntgenological diagnosis of cerebral tumours. He adopted Dandy's technique for ventricle injection and found exact localization possible. To demonstrate the arterial circulation of the brain he had used an emulsion of "Lipiodol" (ten to twenty cubic centimeters) injected into the superior thyroid artery. X-ray photographs were then taken and abnormalities in contour were clearly demonstrated. Study of these abnormalities assisted in the localization of tumours. No ill effects had been noted after these injections.

Dr. Steele Stewart, of Los Angeles, offered an explanation of the effect noted following ramisection for cortical rigidity. He disagreed with Royle's explanation that ramisection reduced muscle tone per se and also with Orbeli's belief that the force and amplitude of contraction were caused by sympathetic action and that it also enhanced the rapidity of development of tension. He suggested that the effect was produced by the section of the nerve fibers controlling the blood vessels of the spinal cord. He considered that the vessels were persistently constricted in this condition which was the cause of the spasticity.

Goitre.—The third symposium was on goitre; Dr. David C. Hall, of Seattle, read a paper on the incidence and prophylaxis of endemic goitre in the northwest of the United States of America. He quoted statistics on 30,000 university students and 8,000 school children over a period of twenty-one years. In recent years education and the distribution of iodine tablets and iodized salts had resulted in a reduction of 40% in incidence. The medical and surgical aspects of the thyroid gland were discussed without revealing anything new. Dr. John S. Lundy reported on the methods used at the Mayo Clinic in inducing anæsthesia for these operations in the year 1928. General anæsthesia alone had been used for under 5% of the patients. Local anæsthesia had been employed alone in 20% and a combination of local and general in the remaining 75%. Nitrous oxide, ethylene with or without ether were the general anæsthetics and carbon dioxide was

used in 80% of these patients who had had gas or ether. The combined form of local and general anæsthesia was deemed to be the most suitable. The local technique consisted of infiltration down to the transverse processes of the second, third and fourth transverse processes of the cervical vertebræ. General anæsthesia was used only for a short period while the gland was being freed.

Cancer.—The fourth symposium was upon cancer and was disappointing in that two papers listed for discussion were not read in the absence of their authors and the others were on the orthodox surgical technique for radical removal. Dr. Frederick L. Hoffman, of Newark, New Jersey, discussed the value of cancer statistics and considered that general statistics were of little value. The data required were the detailed reports of the organs and parts of organs involved, the racial constituents of the population, the follow-up statistics of the results of treatment in detail.

Intestinal Surgery.—Surgery of the lower segments of the intestines was the subject of the fifth symposium. Dr. Alfred J. Murrieta, of Los Angeles, presented a paper on Houston's valves, their relation to the ætiology of rectal constipation and other pelvic dysfunctions. He gave the results in 150 patients treated. Whether or not his opinions agreed with established physiological facts was open to question. Dr. John S. Lundy expressed his opinion that ether administered by the open drop method was still the most satisfactory anæsthesia for lower abdominal operations and was the safest for general use. If local anæsthesia was to be used, the preliminary hypnotic medication must be potent.

Surgery in Industrial Life.—Dr. Clarence E. Fronk, of Honolulu, was chairman for the sixth symposium of industrial surgery and read a paper on the problems in modern industrial surgery. Since industrial insurance had become a universal procedure, medical practitioners had been devoting their attention to the treatment of conditions encountered in industrial employment. If industrial work was being carried out, it was essential to separate it from general practice by having separate accommodation and a regular staff. Examinations should be thorough and pains should be taken to explain the findings carefully to the patient, as the patient's confidence was essential. In the final assessments of the percentage of disability it was best to have the opinion of consultants if any doubt existed before the claim was considered by the official assessing tribunal. These tribunals had to rely mainly on surgical reports and it was desirable that a unanimous agreement of the percentage of disability should be presented. Diverse surgical opinions brought the profession into disrepute, prolonged the court procedure and adversely affected the patient's psychology. The industrial patient's psychology was very important. The pain or discomfort in an injured area should be forecasted by the surgeon, especially when the patient was resuming the use of the affected part. He emphasized that the symptoms were inevitable, that delay in the resumption of work would not prevent them from appearing and that the more the part was used within reason, the shorter the period of discomfort would be. In fractures the shortest period of splinting compatible with union was desirable. Head injuries were probably the most serious causes of disability encountered. Conservative treatment was found to be the best. He assumed that all the patients were in a shocked state and that the shock should be treated and the patient be allowed to recover from this before surgical measures were instituted. In fractured skulls the intracranial injury was the important factor; the key to this was the diastolic blood pressure which was always lowered, even though the pulse rate might be normal for a

time. In traumatic wounds the routine of a general anæsthetic and a thorough cleansing and excision of damaged and soiled tissues should be carried out.

Dr. Le Roy Brooks, of San Francisco, showed a colored motion picture of his technique in blood transfusions which he had carried out over one thousand times.

Dr. E. D. Roberts has used kukui tree as a base for "Lipiodol" emulsions for injection into cavities prior to X-ray examination. This tree grows abundantly in the Hawaiian Islands and the cost of the oil is very small compared with the other bases previously used. It was found to be better in action and to cause no ill effects.

Surgery of the Thorax.—The seventh symposium was upon bronchoscopy and thoracic surgery. Dr. Emil Holman, of Stanford University, discussed post-operative intrapulmonary abscess. An analytical study of 1,908 cases showed that 29% followed some operation and of the latter tonsillectomy was the operation in 50 per cent. His experimental work showed that intrapulmonary suppuration could occur equally by the intrabronchial and intravascular route. Further, that a sterile intrapulmonary embolus became a septic embolus if the animal was in a bacteræmic state. No experimental evidence was available to support the theory that the lymphatic system was a factor in the production of intrapulmonary suppuration.

Dr. Ralph C. Matson described the cauterization of adhesions in an artificial pneumothorax by the Jacobaeus-Unverricht method of closed pneumolysis. He had carried out this procedure on 150 patients and detailed the indications, procedure and end results. The galvanic cautery and diathermy knife were used. Hæmorrhage had occurred on three occasions and diathermy had been a great help in controlling this.

Dr. Leo Eloesser drew attention to chronic bronchial stenoses, a condition which had not received much consideration in comparison with acute stenoses.

Dr. Otis F. Lamson described the surgical treatment of cardiospasm. This consisted of manual dilatation of the cardiac orifice of the œsophagus from below and in the presence of a pendulous diverticulum, the most distal part of the pouch was anastomosed to the stomach. Dr. J. A. Weber, of Seattle, urged the use of bronchoscopy in lung suppuration in all stages, claiming rapid and complete cures by bronchoscopic aspiration, even in the acute stages. Dr. Harry H. Kerr, of Washington, detailed a new method of thoracotomy for intrathoracic tumors. He divided the sternum vertically by trephine and Gigli saw from the first to the sixth intercostal space. Lateral incisions in these spaces allowed the skeletal structure on the affected side to be prised laterally, giving a larger exposure without destruction of ribs than in the usual method. His technique was similar to that published by Dunhill in the English literature about two years previously.

Hospital Standardization. — The eighth symposium was upon hospital standardization. The subject was dealt with fully, the history of the movement and its progress up to the present being detailed. The principles were the same as laid down by Dr. MacEachern who had visited Australia some two years previously. He was the chief speaker on the subject at the conference and also had on view an excellent exhibit of models and photographs of the magnificent hospital buildings built or being built in the United States of America. The authorities building these hospitals had consulted the hospital standardization department of the American College of Surgeons and this department, with its previous experience, was competent to give valuable advice in all departments, such as building, organization, staff selection and finance. The universal practice was the community hospital with accommodation ranging from the most luxurious suites of rooms to

many public wards under the same organization and management. The patients receive accommodation in accordance with their financial means, the profits from the private portion more than balancing the public portion. The Queen's Hospital at Honolulu is a modern and most excellent example of this scheme. In this hospital the public wards were open to the indigent, but the hospital received payment for each patient in these beds direct from the government which reserved to itself the right to inquire into the financial position of the patients. The American College of Surgeons had recently undertaken the standardization of surgical sponges and dressings. Inquiry at the larger American hospitals revealed the fact that over two hundred different types of sponges and dressings were being used, involving waste of labor and material. Experiment and discussion had reduced this number to seven standard sizes and shapes.

Surgery of the Gall Bladder. — The ninth symposium dealt with gall bladder surgery and six papers were presented. Dr. John S. Lundy, of Rochester, in discussing anæsthesia for operations on the upper part of the abdomen was of opinion that a routine method of inducing anæsthesia should be avoided. The needs of the individual patient should be considered, the requirements being optimal relaxation with quiet respiration. Dr. Stanley H. Mentzer, of San Francisco, considered that cholesterosis of the gall bladder was essentially a non-inflammatory condition which occurred in patients who suffered from general disturbance of their fat metabolism. Dr. C. J. Johannesson, Walla Walla, Wash., spoke upon cholecystography. He had administered tetraiodophenolphthalein by the mouth in a cereal and had examined the gall bladder of one hundred subjects as well as the intestinal tract. He was convinced that this method was superior to giving the dye in capsules. Failure to reveal a gall bladder shadow was the result of faulty technique. Since the completion of this series he had used a "tetrado" emulsion in grape juice and had found it more effective. In the series discussed the findings had been substantiated at operation in 98% of the patients. In the other 2% stones had been found in the common bile duct which had not been visible in the skiagrams.

Dr. Andrew S. Lobingier, of Los Angeles, spoke of the surgery of the gall bladder and bile ducts and maintained that it demanded great practical experience to deal adequately with the pathological conditions encountered. Experience had established the part played by remote infections; it was necessary to deal with these infections to insure success. The occasional operator should not attempt this work.

Ophthalmic Work.—Dr. Lloyd Mills, of Los Angeles, the chairman of the tenth symposium, opened the proceedigns with a paper on the prevention of complications of cataract. The main causes of complications were fear, pain, defective incisions, open or unprotected wounds, infections and retained lens material. Fear could be overcome by adequate mental preparation for the operation, as it was caused by ignorance or dread of what the ordeal would be. Pain could be avoided by adequate anæsthesia. He used the Van Lindt facial nerve blocking method with 4% cocaine solution for instillation; the anterior chamber was filled with sterile 4% cocaine and adrenalin solution after the incision. There was practically no postoperative pain in wounds covered by a flap and sutured. The size of the incision could be gauged only by experience; many complications were caused by incorrect incision. Infections under modern methods should not occur if the surgeon made sure before the operation that the tear ducts were patent and the conjunctiva was normal. The difference between the final results of intracapsular and extracapsular operations in the

hands of equally experienced surgeons who used full closure of the flap by suture, depended solely upon the reaction of the eyes to retained lens substance.

Sir James Barrett, of Melbourne, discussed the visual standards desirable for mariners and railways officers. He emphasized that a careful check should be kept on these persons with annual reexaminations up to the age of sixty.

Dr. F. J. Pinkerton, Honolulu, presented a paper on surgery of leprous eye. He reviewed his own experience of 700 patients. Early operation upon the lid in orbicularis paralysis was imperative and should be done before corneal changes had begun. Great disappointment resulted from delayed treatment, either medical or surgical. "Novocain" infiltration was the best for all operations of the leprous eye.

Gastro-Intestinal Surgery.—The eleventh symposium was upon the surgery of the stomach and intestines. Dr. Y. S. Lee, of Korea, had treated two hundred amœbic liver abscesses, 181 in males and nineteen in females. Aspiration and subcutaneous injections of emetine were considered to be the best treatment. Open operation had been almost entirely abandoned. Acute perforations of peptic ulcers, operations on the duodenum and surgical treatment of the large intestine were also discussed.

Operations on the Ear.—Surgery of the ear was the subject of the twelfth symposium. Dr. Robert Pulleine, of Adelaide, stated that in chronic progressive deafness the presence of a posteriorly placed spur of the nasal septum was a frequent causative factor and claimed beneficial results from its removal.

Dr. Ralph A. Fenton, of Portland, recorded his experience of the value of "Dichloramin T" in the dressing of mastoid wounds. He had used this treatment for eleven years and urged its adoption. His formula was a 2% dilution of "Dichloramin T" in "Chlorosane." It was claimed that this solution inhibited bacterial growth and hastened convalescence.

Dr. A. T. Wanamaker, of Seattle, discussed lateral sinus thrombosis, the commonest complication of mastoiditis. In the city of Seattle in four years it had been encountered in 26 out of 487 patients operated upon for mastoiditis. Great value was placed upon the leucocyte count according to the formula of Arneth and Schilling, which depended on the assumption that the presence of mild infection produced an increase in staff forms, while in severer infections young cell forms were manifest. He believed in trying the jugular vein in all circumstances, but did not sever and resect it unless there was evidence of clotting in the vein. The lateral sinus was dealt with on orthodox lines. Seventeen out of twenty patients treated in this way, had recovered. Dr. J. E. Strode, of Honolulu, showed several patients with congenital fistula of the ear. He had traced in all a strong hereditary tendency.

Plastic Surgery.—In the thirteenth symposium on plastic surgery of the face and mouth, Dr. Don H. Palmer, of Seattle, demonstrated his method of treating "cauliflower" ear. The excess of tissue was removed by curettage and dissection, the wound closed except for a small drain and a plaster cast applied to the auricle and left *in situ* for ten days. This splint prevented post-operative effusion. Many lantern slides of these and other facial deformities before and after treatment were exhibited. Dr. H. O. Bames, of Los Angeles, spoke on plastic operations. His treatment of the facial deformities was in accordance with orthodox methods. For pendulous breast he employed a method that had been devised in France. A circular incision was made around the nipple just outside the areola. A similar incision of the same length was made in the skin at the normal nipple site. Through these incisions the breast was dissected free from the skin in all directions. The nipple and areola were

then pushed up and delivered into the upper incision and sutured there. Excess of skin and fatty tissue below was excised and the skin edges were sutured in a line following the inferior order of the breast.

Urological Problems.—Surgery of the kidney and bladder was discussed in the fifteenth symposium. Dr. Alexander B. Hepler, of Seattle, gave his opinions on the pathogenesis of solitary cysts of the kidney. He had done much original work on the subject before reaching his conclusions. Dr. S. Harry Harris, of Sydney, gave a description and showed a motion picture film of his operation of suprapubic prostatectomy with complete closure. Complete closure had been carried out in 110 of his last 118 consecutive operations for benign prostatic hypertrophy. Of the one hundred and ten patients two had died, one from pneumonia on the sixth day and the other from inanition on the forty-ninth day. Reactionary hæmorrhage had occurred only twice and secondary hæmorrhage twice among the earlier operations. The operation accomplished by suture complete and permanent control of hæmorrhage, obliteration of the prostatic cavity and reformation of the prostatic urethra.

Fractures.—The sixteenth symposium was on fractures. Non-union was dealt with by Dr. L. R. Chandler and Dr. James T. Watkins, of San Francisco. They described the method of treatment evolved by the late John Cowan. They claimed that in a series of forty-seven fractures only one failure had occurred. The method had resulted from extensive experimental work on animals. The periosteum with a thin layer of bone attached was separated at the site of the ununited fracture on each fragment. The whole fibrotic union was removed and the medullary cavities were uncapped with a gouge and troughed. The ends of the periosteum were then stitched together with a small shaving of rib in the cavity. In the fractures in which the treatment had failed, non-cellular bone from the tibia had been used instead of rib and its non-vascularity was considered to be the cause of failure. Dr. Edgar L. Gilcreest in his paper considered that skilled traction in fracture treatment did away with the necessity for open operations.

Orthopædic Surgery. — Orthopædic surgery was the subject of the seventeenth symposium. Dr. Norman D. Royle, of Sydney, presented papers on two subjects. In the first he traversed the subject of tendon transplantation with autoplastic tendon sutures. The second was a motion picture demonstration of the increase in muscle tone following stimulation of the sympathetic nervous system. Drs. J. C. Wilson and A. L. Craig, San Francisco and Hawaii, advocated extraarticular fusion of the tuberculous hip joint, claiming that conservative treatment of the joint had not yielded favorable results. A good fusion could be obtained by the operation of ilio-femuroplasty which was fully described. Dr. Fred H. Albee, of New York, discussed the treatment of ununited fractures of the neck of the femur. He reviewed a series of his own cases and the operative procedures carried out in each.

The Fauces and the Nose.—The final symposium was upon surgery of the nose and throat. Dr. Richard Francis, of Sydney, discussed the surgical methods for dealing with affections of the tonsil. He preferred to use general anaesthesia by the intratracheal method for operations on this organ. He considered that admission to hospital was essential. Dr. M. C. Findley, of Salem, described his new technique in adenectomy in which he advocated a to and fro movement laterally of the adenotome in the course of removal. Dr. O. R. Gullion, of Eugene, had frequently found the ethmoid and sphenoid sinuses most unhealthy in apparently healthy noses. His attention in each case had been directed to the sinuses by the eye condition in which persistent pathological changes unrelieved by routine eye treatment, were found.

The Eyes in Education

By LLOYD MILLS, M. D.
A delegate from Los Angeles to the Pan-Pacific Surgical Conference

"A conservative interpretation of the data revealed by the examinations of millions of school children in all parts of the civilized world during the past generation shows that approximately 20% need corrective treatment for eye defects, and that there is a progressive increase of these defects with grade progress in the schools." Myopes for example constitute only about 10% of the visually defective among children between 5 and 9 but this becomes about 25% between 10 and 14. It is incumbent upon the schools not only to discover defects and disabilities that impede growth and interfere with school progress, but also to make the conditions of school life and school practice such as will conserve and promote the physical and mental fitness of the children."

A casual study of any considerable group of school children shows how far these ideals are from realization. From the early grades children are herded along the highways of education at an empirical speed chosen as "normal" toward an empirical goal called "efficient adulthood," but the throng which reaches this goal too often are hard-eyed, defeated, myopic, and without vision. They have not even been taught how to live.

If preventive medicine means anything in ophthalmic practice it means that we must face the visual problems of education not only in the endeavor to limit or prevent visual, nervous and mental wreckage but to devise saner educational methods based upon correct visual principles. This study was made to such ends.

Two basic faults quickly become evident when current educational practice is observed. The first is the needless hurry of education. The child is launched into a vortex of speed, as soon as he can interpret letters, words and numbers, in which the outstanding idea is to bring him to and maintain him at his "maximum efficiency" by means of the lash of competition with his fellows; with other schools, by the use of flash tests, stop watches and the individual and class graphs of the daily records. The final results of the persistent application of these pressure factors for creating "maximum efficiency," a theory well proven and thoroughly discredited in industry, can only be strain and injury save in exceptional cases. When a reasonable point of physical speed of any sort is exceeded, organic efficiency begins to suffer and educational stress is no exception. It is strange that the element of payment should have been left out of the pedagogic equation and yet it is very often an outstanding feature mentally, nervously and visually.

Why is it needful to spur Youth to more breathless endeavor? What goal is so outstandingly desirable as to demand this bitter struggle? The world does not require faster and more neurotic individuals but urgently needs more accurate and more dependable ones and I submit that accuracy, the underlying factor in intellectual dependability, is threatened at every point by speed.

The education expert, apart from his total failure to evaluate human waste in education has made his second and worst fundamental error in considering that central vision, the greatest single medium of education, is capable of indefinite enlargement by training and will. Text books for teachers repeatedly make the impossible assumptions that foveal vision is capable of amplification and that the adjacent macula region by training in speed, is capable of acquiring more or less of the function of foveal vision.

The practical facts concerning central vision which demand clear statement for their educational values are that the espe-

cial arrangement of the visual cones and outer nuclear layer of the retina at the fovea is unique, is not susceptible of modification save by injury or disease and gives this region its limited and peculiar sensitiveness to visual detail. *Hand in hand with this accuracy of visual appreciation goes visual memory,* as the quality of this form of memory directly is related to the clarity of the visual picture, *a matter of the greatest importance in the technic of education.*

The smallest appreciable area of foveal vision is a point, subject to the errors of aberration in the globe. Its largest area is bewilderingly small and, while slightly variable in individuals, it rarely exceeds a word of five letters at one fixation at the reading distance. Clear central vision has little spread even when projected out on the horizon and its maximum of about two degrees of arc actually never is greater than a single fixed distant point of attention.

Weymouth and his associates recently have studied the visual acuity within the area centralis, covering a field of 2 degrees 50 minutes, or 0.84 mm. in diameter.

The isopteral charts made in this study illustrate the exceedingly small limits of maximum visual acuity and show that in accurate fixation the visual acuity of the zone approximately 1 degree either side of the point of fixation has dropped to 0.6. This becomes 0.4 at about 3 degrees, 0.3 at 5 degrees and 0.2 at 9 degrees.

It will be noted, in testing practical foveal vision with precision, that usually only five letters, actually can be recognized at a single steady visual fixation. It will be evident also that the shading of these letters into indistinguishable symbols is abrupt, and that not more than one letter, at the most, on either side of the five in a long word actually can be identified without definite lateral movement. Lateral oscillation or movement, known in reading practice as saccadic movement, will, however, make enough of the preceding and succeeding words sufficiently clear to permit them to be guessed or even recognized in any quick look.

The keenness of sensory recognition at the foveal center is so great in fact, that "foveal vision," according to Weymouth, "can perceive differences 60 times smaller than it can fix separately."

The saccadic shifting always takes place after each fixation and preliminary to the next. This, however, is a form of use of foveal and not of peripheral vision, by which no words whatever can be comprehended in a single exact fixation. Accuracy of perception thus is shown to be a quality of foveal vision alone during the simple conditions of a steady fixation. It is not clear, then, how peripheral vision by the mere process of ocular movement is presumably sudden, develop, a power, that it does not possess under the infinitely more favorable conditions for vision given by quiet fixation.

We know further, as physicians in this especial field, having experience with the end-results of hemorrhage, exudate, rupture and holes in the fovea, and with the central lesions which impair or destroy foveal function, that neither the fovea nor the zone of retina just about the fovea has the capacity of acquiring any greater power, breadth of quality of vision than it has naturally. The anatomic structures which have been placed there are immutable and no amount of literary alchemy, tachistoscopic exposures or other educational spurring will transmute their visual quality into that of a higher order.

The eccentric fixation which occurs in scotoptic or dark adaptations and occasionally after injury, macula degeneration, disease or strabismus, never leads to visual quality even remotely approaching the qualities of normal central vision. This eccentric vision always is peripheral in type. Little comfort can be derived by the theorists who would educate the extrafoveal region to foveal function in observing the relatively poor form of vision which long and forced use of this region produces under such conditions.

The practical facts of foveal use are discussed at length in the body of this paper.

Persistent attempts to do the impossible by enlarging the span of visual accuracy not rarely lead to potential and actual deviations of the eyes. Exophoria more often results in the restless, nervous child with too active a mind, and esophoria in the deeply intense child, the mental habit appearing to be the main factor in determining the ocular deviation. I have always held the opinion that the production of myopia, with its characteristic exophoria, which usually becomes evident at about that period in life when school affairs begin to press, was bound up with the hurried and abnormal use of peripheral vision with its accompanying and enabling muscular overaction. The myope, who is usually a fast-minded individual, persisting along these lines of always seeking mass effects and speed rather than accuracy, gradually acquires nothing but peripheral vision, practically speaking. It is evident, as the far point in myopia may vary from 33 cm. in moderate cases to 2.5 cm. or less in high myopia, that there is no foveal vision beyond this far point and the whole field beyond this distance possesses only peripheral vision. Training these children consequently must stress easy deliberation and accuracy, without hurry. The reeducation of their neglected foveal vision is what they actually appear to require.

General recognition must be made of the fact that there is a definite and individual limit to the speed of correct recognition and perception and if this limit is exceeded there is a penalty in the lessening of accuracy, poorer memory and inhibition of the associative values which are so important a part of learning. Poor memory, so constantly associated with the excessive use of peripheral vision among the fastminded, is so common and outstanding a fault in myopia with exophoria that a statement to the effect that peripheral vision has little or no memory values probably presents the exact fact.

The subject of elementary education is too important to be left to the jurisdiction of educational experts alone, as problems of vision and of mental and nervous reactions, among others, enter deeply into the matter. The fullest collaboration of the best balanced of all the groups involved should be given to the most vital of educational problems.

Were I asked to outline a tentative plan of fundamental education based largely, as it must be, on the known facts of visual function, I would suggest that,

1. Simple demonstrations and definite instruction in the limits of central vision, not alone on print but with objects of all kinds, should be begun in the kindergarten and first grade. This should be applied specifically to letters and numbers and to words not exceeding five letters in the first and second grades. The relation of good memory to this form of vision alone should be demonstrated to and understood by every child. The definite standard of accuracy should be demanded from the start rather than speed.

2. In the second grade, in the interest of clear vision and clear understanding of words and their meaning, the interfixation movement should not exceed two words.

3. Eye injury usually begins in the third grade. Every child, regardless of intelligence, should have learned by this time that a single word of five letters is all that can be seen without effort; that the small link words may be passed over casually in silent reading, as they are comprehended indirectly, and that pauses should be made on or near all words expressing action or ideas; i.e., active verbs, nouns and important adjectives. The habit of an interfixation range of between one to four words, according to the material and purpose of the reading, will be formed by this method, without leaving the habit of pausing to individual misdirection more than is necessary. Speed can be increased within limits that are normal for the individual after accuracy has been established as the cornerstone.

Synopsis of Address on Cancer in Hawaii*

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In coordination with my cancer survey of San Francisco and other localities in the United States and Canada I have made a corresponding study of the cancer mortality records of Hawaii for the five years ending June 30, 1928. Through the cooperation of the Territorial Board of Health and the kindness of Dr. Trotter, I have been furnished with transcripts of 966 deaths from cancer in the Territory of Hawaii during the five years under review. Of these, 602 were the deaths of males and 364 females. The analysis covers all the essential facts revealed by the death certificates. Of the 602 male deaths from cancer 308 were from cancer of the stomach, followed in order of importance by 63 deaths from cancer of the liver and gall bladder, 28 deaths from cancer of the intestines, 27 deaths from cancer of the oseophagus and 19 deaths from cancer of the pancreas. Of the 364 deaths from cancer of females, 128 were from cancer of the uterus, 111 from cancer of the stomach, 22 from cancer of the breast, 20 from cancer of the intestines and 15 from cancer of the liver and gall bladder.

The average age at death was 57.4 years for males and 53.9 years for females, which is lower than the corresponding figures for San Francisco (Males 59 years and females 58 years).

The average known duration of the disease was 15.9 months for males and 18.4 months for females. The corresponding figures for San Francisco are 15.7 months for males and 21.5 months for females.

Of the male deaths, 33.9% made record of an operation previous to death, while for females this proportion was 40.2%.

The tables appended to the address give details of cancer by organs and parts for all leading races of Hawaii with distinction of sex. These reveal some extraordinary variations well deserving of extended consideration. But the outstanding fact is the extreme rarity of cancer of the breast in Japanese women. Out of 125 Japanese females dying from cancer during the five years under review not a single death was attributed to cancer of the breast. For Chinese women, however, the proportion dying from cancer of the breast was 16.7%. This compares with 6.1% for all races, 6.9% for Hawaiians, 8.0% for Caucasians. Unfortunately for many of the races, the numbers are too small for a safe generalization.

Of the reported mortality from all causes, cancer formed 4.86% of the deaths of males and 4.66% of the deaths of females. These proportions vary decidedly for different races, having been as follows:

	Males	Females
Hawaiians	3.97%	5.34%
Caucasian Hawaiians	2.97	5.36
Asiatic Hawaiians	0.66	2.41
Portuguese	3.93	4.33
Porto Ricans	4.58	7.58
Chinese	7.49	3.73
Japanese	6.97	5.24
Koreans	6.71	6.19

The general death rate from cancer for Hawaiians, both sexes, was 69.8 per 100,000, which compares or contrasts with a rate of 96 per 100,000 for the United States registration area. For males the rate was 63.1 per 100,000 and

* The complete address will be found in the Proceedings of the Pan-Pacific Surgical Conference published by the Pan-Pacific Union.

for females 55. The outstanding cancer mortality fact represented is deaths from cancer of the stomach and liver. The rate for this group is 33.4 per 100,000 of population. For cancer of the stomach alone the rate is 25.9. This may be compared with a corresponding rate of 34.0 for the United States Registration area and 51.5 for San Francisco. Cancer of the buccal cavity prevails in Hawaii at the rate of 1.5 per 100,000. The corresponding rate for the United States registration area is 2.9 and for San Francisco 7.2. Cancer of the intestines, peritoneum, and rectum, prevails in Hawaii at the rate of 4.5 per 100,000, while the corresponding rate for the U. S. registration area is 14.0 and 24.4 for San Francisco. Cancer of the female generative organs prevails in Hawaii at a rate of 8.5, while the corresponding rate for the U. S. registration area is 13.8 and for San Francisco 16.6. Based on the female population alone, the rate for Hawaii is 20.7 against a San Francisco rate of 35.9. Cancer of the breast prevails in Hawaii at a rate of only 1.4 per 100,000. For the U. S. registration area, the corresponding rate is 8.8 and for San Francisco 12.5. For the female element only, the rate for Hawaii is only 3.3 against a rate of 26.7 for San Francisco. Cancer of the skin is also very uncommon in Hawaii, the prevailing rate being 0.5 per 100,000, which compares with a rate of 2.5 for the U. S. registration area and 1.6 for San Francisco. The true significance of these differences can, of course, only be revealed by supplementary studies of each and every organ or part and its correlation to racial factors.

Of the 966 deaths from cancer in Hawaii, 137 came to autopsy, while 379 deaths occurred in hospitals, with 15 more deaths in institutions.

The foregoing statistics are of exceptional value in that they have been compiled by precisely the same method as has been followed in my other cancer surveys for other sections of the world, including an examination of corresponding death certificates for Manila representing Filipinos. If the solution of the cancer problem is to be realized it must, to a large measure, depend upon such studies as will clearly visualize the essential cancer facts in correlation to other factors not easily defined or limited. But I have tried to present in the foregoing the Hawaiian cancer problem and its relative importance, particularly with reference to its racial aspects. I am firmly convinced that race has an essential bearing upon the relative cancer frequency, although it is difficult to separate the biological factors from those determined by habits and customs. Certainly the dietary factor in its relation to cancer can nowhere be studied to better advantage than in Hawaii. It is a veritable biological laboratory suitable for the purpose. It is, therefore, hoped that the foregoing will constitute a useful contribution to the subject.

The Hospital Problem

By SIR JAMES BARRETT

The Pan-Pacific Surgical Conference, held in Honolulu from August 14 to August 23, under the auspices of the Pan-Pacific Union, can be described only as an unqualified success. It was attended by most of the surgeons of Hawaii, by a large number of visitors from the United States, and by representatives from Japan, China, and other Pacific countries. Australia sent nine and New Zealand four surgeons. It is necessary to make but brief allusion to the kindly and courteous reception of visitors, for those who know the United States are always sure of a cordial reception. Several Oriental entertainments were given

by medical men of Asiatic nationality. It would be possible to write in detail of the excellent technical work only in a medical journal, but a passing allusion may be made to the disclosures of the remarkable development of brain surgery and chest surgery. Practically every description of a new method was followed by the exhibition of a moving picture illustrating the procedure, which consequently became easy to follow.

The visit to the leper receiving station at Kalihi will never be forgotten by those who undertook it. There are in Hawaii about 500 lepers. The hopeless cases are sent to the Island of Molokai, but the curable cases are treated at Kalihi, or the patients are allowed out on probation. The able medical officer in charge at Kalihi gave a demonstration of all types of the disease. Many cases would not be recognized except by an expert. The medical officers and nurses take no precautions against infection except ordinary cleanliness, since it appears that no one knows how the disease is spread. It is a mystery. Animals cannot be inoculated, and in the few cases in which condemned criminals have agreed to submit to inoculation the result has been negative. Few Europeans are attacked. The victims are mostly Asiatics. Even the children of a leprous father and mother often escape. In the Philippines there are 5000 to 6000 cases. At one period Europe contained many lepers, but we do not know why the disease disappeared. Sometimes the fatal end of a disastrous case seems to be terrible. The visitors received a shock upon learning that the much-vaunted Chaulmoogra oil had only a limited utility. This fact was demonstrated conclusively, to the astonishment of non-experts.

A notable feature of hospital work in Honolulu is the weekly or monthly conference of all medical practitioners who use the hospital. Details of fatal cases and of patients who have made unsatisfactory progress are presented for consideration, and a sort of prosecutor and defendant discussion takes place, all records being available. As no one knows who attended the case, the discussion is entirely impersonal. It occupies one hour, and to be successful it is held at the busiest time of the day, viz., from 9 to 10 o'clock. It is most impressive.

Much discussion took place respecting the optimum size of hospitals. The matter was presented much as follows: —Let us suppose that a hospital is supplied with a kitchen, laundry, and administrative unit, a pathologist, an X-ray plant, a dietitian, and a biochemist. It is obvious that the plant is too large and expensive for 50 beds. It is also clear that it cannot properly provide for 2000 beds. What is the optimum size? Speakers pointed out that in the very large hospitals the patients lost their human identity, and valuable time was wasted in giving them cross-country rides. One pathologist stated that a large part of his day was spent in walking, owing to distances. At Schofield Military Hospital, which is designed for 400 beds, it almost appeared that small motors would be wanted in the corridors. With a few exceptions the opinion was expressed that 400 beds was the maximum for efficiency. One surgeon put it as low as 250. If one can interpret opinions correctly, the day of giant hospitals is past. They can, of course, be built in units, but this simply means putting two hospitals alongside each other, whereas they would be better placed separately, with regard to the convenience of the patients.

A visit to Hawaii forces one to think. One citizen in every three is Japanese. This clean, prosperous, and industrious race is increasing faster than any other, but the people have left the plantations for the cities. So have all the other races except the Filipinos. The question put is, naturally: What will happen when the Filipinos make for the cities? This question, however, belongs to another story. It does not concern the excellence of the Pan-Pacific Surgical Conference, which is now to be placed on a permanent basis.